Amendments to the Claims:

Listing of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

WHAT IS CLAIMED IS:

1-23. (Canceled)

24. (Currently amended) ~~An immunogenic composition~~ A vaccine for protecting an animal subject against lethal infection with *B. anthracis* comprising

(a) a first isolated polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids ~~42 to 285~~ 83 to 283 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;

(b) a second isolated polynucleotide which encodes a *B. anthracis* protective antigen (PA) protein, or a fragment thereof that contains amino acids 204 to 764 of SEQ ID NO:4, said second polynucleotide being operably linked to a promoter which drives expression of said PA protein or fragment thereof in cells of a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity.

25. (Canceled)

26. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 24 wherein said first and second isolated polynucleotides are on separate polynucleotide constructs.

27. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 24 wherein said first and second isolated polynucleotides are on the same polynucleotide construct.

28-30. (Canceled)

31. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 24 wherein said first isolated polynucleotide encodes sequentially amino acids 34 through 719 of SEQ ID NO:2, an amino acid other than glutamic acid, and amino acids 721 through 809 of SEQ ID NO:2.

32-40. (Canceled)

41. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 24 wherein each of said first and said second isolated polynucleotides is incorporated into ~~a mammalian~~ an eukaryotic expression vector.

42. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 24 wherein said first and said second isolated polynucleotides are incorporated into the same or separate ~~mammalian~~ eukaryotic expression vectors.

43-44. (Canceled)

45. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 41 wherein the ~~mammalian~~ eukaryotic expression vector is a viral expression vector.

46. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 41 wherein the ~~mammalian~~ eukaryotic expression vector is a ~~eukaryotic~~ mammalian expression plasmid.

47. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 42 wherein said first and said second isolated polynucleotides are incorporated into the same or different viral expression vectors.

48. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 42 wherein said first and said second isolated polynucleotides are incorporated into the same or different eukaryotic expression plasmids.

49. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 24 wherein each of said first isolated polynucleotide and said second isolated polynucleotide does not become integrated into the genome of a mammalian subject's cells when said polynucleotides are introduced into said cell.

50-52. (Canceled)

53. (Currently amended) The ~~immunogenic composition~~ vaccine of claim 24 wherein each of said first and said second polynucleotides is incorporated into a construct selected from the group consisting of linearized DNA, linearized RNA, a DNA plasmid, a viral vector, and a bacterial vector.

54. (Currently amended) ~~An immunogenic composition~~ A vaccine for protecting an animal subject against lethal infection with *B. anthracis* comprising

(a) a first mammalian expression vector comprising a polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids ~~42 to 285~~ 83 to 283 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;

(b) a second mammalian expression vector comprising a polynucleotide which encodes a *B. anthracis* protective antigen (PA) protein, or a fragment thereof that contains amino acids 204 to 764 of SEQ ID NO:4, said second polynucleotide being operably linked to a promoter which drives expression of said PA protein or fragment thereof in cells of a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity.

55. (Currently amended) ~~An immunogenic composition~~ A vaccine for protecting an animal subject against lethal infection with *B. anthracis* comprising

a mammalian expression vector comprising

(a) a polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids ~~42 to 285~~ 83 to 283 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;

(b) a polynucleotide which encodes a *B. anthracis* protective antigen (PA) protein, or a fragment thereof that contains amino acids 204 to 764 of SEQ ID NO:4, said second polynucleotide being operably linked to a promoter which drives expression of said PA protein or fragment thereof in cells of a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity.

56. (New) The vaccine of claim 24 wherein said first isolated polynucleotide encodes amino acids 42 to 285 of SEQ ID NO:2.

57. (New) A vaccine for protecting an animal subject against lethal infection with *B. anthracis* consisting essentially of

(a) a first isolated polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids 83 to 283 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;

(b) a second isolated polynucleotide which encodes a *B. anthracis* protective antigen (PA) protein, or a fragment thereof that contains amino acids 204 to 764 of SEQ ID NO:4, said second polynucleotide being operably linked to a promoter which drives expression of said PA protein or fragment thereof in cells of a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity.